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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,316	02/08/2002	Ralph M. Steinman	7529/1F590-US1	3722

7590 07/16/2004

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EXAMINER	
MCGAW, MICHAEL M	
ART UNIT	PAPER NUMBER
1648	

DATE MAILED: 07/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/049,316	STEINMAN ET AL.	
	Examiner	Art Unit	
	Michael M. McGaw	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *35 and 37-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *35 and 37-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/5/03 and 2/8/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to applicant's election filed April 12, 2004, electing to prosecute Group VI (claims 35 and 37-39). Thus, claims 35 and 37-39 are pending and under examination.

Please note that the examiner assigned to review this application has changed.

Election/Restrictions

Applicant's election with traverse of Group VI in the reply filed on April 12, 2004 is acknowledged. The traversal is on the ground(s) that additional groups can be searched without undue burden. This is not found persuasive because each group requires a divergent search which poses an undue burden. Specifically, groups VI and VIII have divergent search requirements because group VI requires a search involving the administration of proteins and group VIII requires a search involving the administration of nucleic acids.

The requirement is still deemed proper and is therefore made FINAL.

Specification

The disclosure is objected to because of the following informalities: In the section for the BRIEF DESCRIPTION OF THE DRAWINGS on page 5, line 14, applicant has left out "4H" from the series from 4A through 4I. Additionally, Figure 8C is not described in the BRIEF DESCRIPTION section. Lastly, the descriptions for the series of figures for 4A-4I and 5A-5F refer to the spatial organization of the figures on the page. For

instance, on page 5, line 15 applicant refers to "[t]he left column (A-C) shows ..." The manner in which applicant has referred to the figures does not correspond to the spatial organization of the figures on the page.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 35 and 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong, C. et al. in view of Khanna, R et al. (1999) and/or Khanna, R et al, (1997).

Applicant claims a method for making an EBV protective dendritic cell, which comprises contacting a human dendritic cell with EBNA-1 *ex vivo*.

Wong, C. et al., Induction of Primary, Human Antigen-Specific Cytotoxic T Lymphocytes In Vitro Using Dendritic Cells Pulsed with Peptides (1998) Journal of Immunotherapy, 21(1):32-40 teaches a method for making an EBV protective dendritic cell, which comprises contacting a human dendritic cell with LMP2a *ex vivo* (see page 33). Furthermore, in reference to claims 37-38, Wong teaches contacting the dendritic cell with a stimulatory cytokine and maturing cells *ex vivo* (see pg. 33, col. 2). As to claim 39, it is known in the art to mature dendritic cells in monocyte-conditioned medium. (Note that, for this technique, on pg. 33 col. 2 Wong references Romani, et al.

(1994) J Exp. Med. Vol. 180: 83-93 who references O'Doherty, et al. "Dendritic Cells Freshly Isolated from Human Blood Express CD4 and Mature into Typical Immunostimulatory Dendritic Cells After Culture in Monocyte-condition Medium", J. Exp. Med., vol. 178, Sep. 1993, PP. 1067-1078). Lastly, Wong showed that dendritic cells pulsed with the EBV peptide stimulated a robust memory CTL response. Wong does not teach the use of EBNA-1.

It is widely recognized that the potential target antigens for CTL recognition are limited to three predominate, latency-associated antigens EBNA1, LMP1 and LMP2, and consequently, therapeutic strategies should focus on one of these three antigens. (see Khanna R. et al., Vaccine strategies against Epstein-Barr virus-associated diseases: lessons from studies on cytotoxic T-cell-mediated immune regulation (1999) Immunological Reviews, vol. 170: 49-64 at pg. 60.(referred to as "Khanna 1999 ") See Khanna, R. et al. Pg. 60) (See also Rickinson AB and Kieff E. Epstein-Barr Virus In: Fields Virology, 3d Ed. 1996 p. 2436, 1st full sentence). Furthermore, it has been shown by that CTL's sensitized with EBNA-1can efficiently recognize EBV-transformed B cells (see Khanna, R. et al., Targeting Epstein-Barr virus nuclear antigen 1 (EBNA1) through the class II pathway restores immune recognition by EBNA1-specific cytotoxic T lymphocyes: evidence for HLA-DM-independent processing (1997) International Immunology, Vol. 9(10) 1537-1543 at pg 1542. (refered to as "Khanna 1997").

One of ordinary skill in the art would have been motivated to substitute EBNA-1 for LMP-2a because it is widely recognized that EBNA-1 is one of the primary latency associated antigens and that priming of CTLs by dendritic cells previously pulsed with

EBNA-1 antigen would be an effective strategy to generate a CTL response to EBV-transformed B cells through their expression of EBNA-1 during latency. One of ordinary skill in the art would have expected to be able to make an EBV-protective dendritic cell by substituting EBNA-1 for LMP2a because the technique for creating antigen-pulsed dendritic cells is well established and Wong et al. teaches methods for creating such cells using EBV latency-associated antigens. Therefore the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael M. McGaw whose telephone number is (571) 272-2902. The examiner can normally be reached on Monday through Friday from 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel can be reached on (571) 272-0902. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thursday, June 24, 2004

MARY E. MOSHER
PRIMARY EXAMINER
GROUP 1800 1600